DESCRIPTION

ADJUSTABLE SAFETY DISTANCE SPACER FOR BICYCLES

OBJECT OF INVENTION

The present invention is referred to one adjustable safety distance spacer for bicycles which is fastened by supports to the bicycle frame. It allows the cyclist to signpost with any of the two hands, in a fast, comfortable and safe way, the situation of the minimal distance of security when he is overtaken by another vehicle. This distance depends on the characteristics of the road surface, thus it guarantees not to be collided by incompetence or careless of the drivers when they overtake, establishing a strip of security between the lateral border of the cyclist and the one of the vehicle that overtakes.

BACKGROUND OF INVENTION

The distancers that we have known until now are fixed, are not able to include the whole of the minimal distances shown in the present-day Traffic Law. This distance of 1.5 meters, is lateral, and is not adjustable when we want to signpost, so the use of the distances present a great inconvenience since they cannot be adapted to the constant changes of the traffic and road surfaces, with the resulting risk to cause impact against another vehicle, pedestrian or static objects, risking the stability of the bicycle and the cyclist's security.

Those functional and utilization deficiencies don't exist in the present invention which is totally innovative for its forms, way of use and effectiveness when we want to safeguard the security of the cyclist who is overtaken by another vehicle. This gadget allows to regulate the distance of security which goes from 0 meters to 1.5 meters, its movable elements refract the light and allow to detect the presence of the cyclist on the road, even during the night, increasing the security.

DESCRIPTION OF THE INVENTION

The adjustable safety distance spacer for bicycles is an accessory to install in any kind of bicycles, since it can be adapted to the different frames. Its placing does not get in the way to manoeuvrability and therefore in the security when using the bike. It can also be used in wheelchairs.

The adjustable safety distance spacer is formed by two guide tubes which are joined to the bicycle frame by two supports. These supports are adapted to all the frames found in the market. A thin spacer rod is placed inside the guide tubes. Its flexibility makes possible to adapt it to the forms of the tubes. This stick goes through the perforated plugs, which are placed at the every end of the guide tubes.

In one of the ends of the thin spacer rod a refracting rotor is situated. This is formed by four curved blades which spin on its own axle when the air drafts get in. This refracting rotor allows to reflect the light received by other vehicles and this helps to signpost the distance of security during the night.

Around the refracting rotor there is an antihooking protector, in a circumference form, which avoids the rotor to get hooked with those possible objects that accidentally may be touched on the way, such as, branches, posts or even vehicles.

The aforementioned protector is fastened to the spacer rod by means of a hairpin which provides safety.

When the thin spacer rod comes out of the guide tube, at the end, where is situated the refracting rotor with his protector, this one, by the form that the guide tube has, it becomes situated in a perpendicular plane to the plane that it contains the bicycle. The spacer rod can also be used as a support for other elements such as sidelights. At the end of the thin spacer rod there is a little sphere which makes easy the advance of the extreme of this stick in the inside of the guide tube.

SHORT DESCRIPTION OF THE DRAWINGS

For a better understanding of the all described elements in the present memory, some drawings are included. It represents a practical case of realization of the adjustable safety distance spacer for bicycles.

In these drawings, the figure 1 is a general perspective of an assembled group, where the guide tube - 1 - and the guide tube - 2 - are fastened to the bicycle frame by means of the double support - 3 - and of the simple support - 4 -. Inside the guide tube - 1 - and the guide tube - 2 –, pass the thin spacer rod -5- crossing two perforated plugs - 9 -. The thin spacer rod -5- contains the rotor -7- in one of its extremes which is protected by the antihooking -6-, which is linked with the thin spacer rod by means of a safety hairpin - 8 -.

Figure 2 shows the front view and the side view of the Tube Guide - 1 - of the figure 1.

Figure 3 shows the front view and the plan view of the Tube Guide - 2 - of the figure 1.

Figure 4 shows the front view, the plan view, the sides views and rear view of the Double Support - 3 - of the figure 1, where -1- is the Body of the Support, -2- is The Distancer, -3- is the Uncovered Washer, -4- is the Tightener, -5- is the Belt in charge of embracing the tube of the bicycle frame, -6- is the Screw and -7- is the Screw Nut.

Figure 5 shows the front view, the plan view, the sides views and rear view of the Support Simple -4-, of the figure 1, where -1- is the Body of the Support, -2- is the Distancer, -3- is the Uncovered Washer, -4- is the Tightener, -5- is the Belt, -6- is the Screw and -7- is the Screw Nut.

Figure 6 shows the front view in cut and the sides views of the Body of the Support -1- of the figure 4.

Figure 7 shows the front view and the plan view of the Distancer - 2 - of figures 5 and 12.

Figure 8 shows the front view and the side view of the Uncovered Washer - 3 - of figures 5 and 12.

Figure 9 shows the front view and the plan view of the Tightener -4- of the figures 5 and 12.

Figure 10 shows the front view and the plan view of the Belt - 5- of figures 5 and 12.

Figure 11 shows the front view and the side view of the Screw - 6 - and of the Screw Nut - 7 - of figures 5 and 12.

Figure 12 shows the front view in cut and the side views of the Body of Support - 1 - of figure 5.

Figure 13 shows the front view and the plan view of the Thin Spacer Rod - 5 - of figure 1.

Figure 14 shows the front view and the side views of the Antihooking Protector of the Rotor -6- of figure 1.

Figure 15 shows the front view and the side view of the Refracting Rotor -7- of figure 1.

Figure 16 shows the front view and the side view of the Protector - 8- of figure 1.

Figure 17 shows the front view and the side view of the Perforated -9- of figure 1.

Figure 18 is a general perspective of an assembled group, where the guide tube - 1 - and the guide tube - 2 - are fastened to the bicycle frame - 10 - by means of the double support - 3 - and of the simple support - 4 -. Inside the guide tube - 1 - and the guide tube - 2 - pass the thin spacer rod -5- crossing through two perforated plugs - 9 -. This spacer rod -5- contains the rotor -7- in one of his extremes which is protected by the antihooking -6-, which is solidary with the thin spacer rod by means of a safe in form of a hairpin - 8 -.

DESCRIPTION OF PREFERRED REALIZATION

The adjustable distancer of security for bicycles (figure 1) is composed of the pieces - 1 -, - 2 -, - 3 -, - 4 -, - 5 -, - 6 -, - 7 -, - 8 - y - 9 -.

Piece - 1 - (figure 1) of plastic material, it is a tube and it fits up in forms as well as in dimensions to the explained elements in the figure 2.

Piece - 2 – (figure 1) of plastic material, it is a tube and it fits up in forms as well as in dimensions to the explained elements in the figure 3.

Piece - 3 – (figure 1) is a support for two tubes and it fits up so much in forms as in dimensions to the detailed in figures 4, 6, 7, 8, 9, 10 and 11. Figures 6, 7, 8, 9 and 10, are plastic material, while the pieces of the figure 11 are made of steel or aluminium.

Piece - 4 - (figure 1) is a tube support and it fits up so much in forms as in dimensions to the detailed in figures 5, 7, 8, 9, 10, 11 and 12. Figures 7, 8, 9, 10 and 12, are of plastic material, while the pieces of figure 11 are made of steel or aluminium.

Piece - 5 - (figure 1) of carbon fibre , is a thin rod and it fits up so much in forms as in dimensions to the detailed in figure 13.

Piece - 6 - (figure 1) of plastic material, has got a hoop form and it fits up so much in forms as in dimensions to the detailed in figure 14.

Piece - 7 - (figure 1) of plastic material, it is a rotor with four shovels, which is painted with a refracting paint, and it fits up so much in forms as in dimensions to the detailed in figure 15.

Piece - 8 - (figure 1) of plastic material, it is a safety element with a hairpin shape and it fits up so much in forms as in dimensions to the detailed in figure 16.

Piece - 9 - (figure 1) of plastic material, is a perforated cork and it fits up so much in forms as in dimensions to the detailed in figure 17.

From the description and by the observation of the drawings, we can appreciate how innovative the adjustable distancer of security for bicycles is (figure 18), which is joined to the frame - 10 - of the bicycle by means of the supports - 3 - and - 4 -permitting the cyclist to fasten with a hand the thin spacer rod -5-, in the space comprised between supports -3- y -4-, moving it forwards o backwards, decreasing or increasing the distance of security of the cyclist , in a fast and effective form.

The materials used in the manufacture, forms and dimensions will be independent from the invention's object, as long as they do not affect to its essence.

INDUSTRIAL APPLICATION

The dimensions, forms and materials used in the adjustable safety distance spacer for bicycles, allow to be manufactured at the present time by any industry dedicated to the moulding and assembling of plastic pieces.

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